

well-described from a strategic point of view. *Agrobacterium* is treated in depth and eucaryotic microorganisms are represented by *Aspergillus nidulans* and by *S. cerevisiae* for which chromosomal metabolism is used as a peg on which to hang genetics and justify yeast as a model eucaryotic organism. Addenda provide a useful means of including topics not easily integrated within articles; these include 'tricks of the trade' applied to yeast genetics and fungal fermentation.

The wealth of information is reflected in the excellent 18 page

index but has also resulted in a type format that, at ca. 900 words per page induced eye-strain in this reader. Illustrations are plain and clear although not always profuse enough. A knowledge of basic microbial genetics and elementary molecular biology is assumed. Despite the rather short-sighted title, if you are interested in or teach Microbial Genetics, this will be a useful and convenient book.

P.R. Brown

Genetically-Engineered Proteins and Enzymes From Yeast: Production Control; Edited by A. Wiseman; Ellis Horwood; New York, 1991; 203 pages, £35.00.

The stated aim of this book is to provide information from several sources on the techniques and procedures currently used in the transfer of mammalian, particularly human, genes into yeast cells and the factors regulating the expression of these genes. This objective is certainly achieved but the book provides rather more than the essentials for genetic engineering. The opening chapter presents a concise but comprehensive account of the basic principles of yeast genetics including the construction of genetic maps from linkage data, tetrad and random spore analysis, recombination by protoplast fusion, the development of industrial strains and a lucid account of the mitochondrial genetic system. In a book on biotechnology this is unexpected but a most welcome inclusion particularly for biochemical engineers.

A second chapter describes how to make yeast vectors and the transformation procedures and gives a graphic description of the mechanism of integration of heterologous DNA into host chromosomes. This is followed by an extensive treatise on the intricacies and pitfalls in the computer control of fermentation in which the timing of the induction of enzymes seems to be all important for the successful harvesting of relevant proteins.

A final chapter deals with the molecular biology of gene expression with special attention to a variety of promoter elements in the induction of heterologous proteins. Apart from standard inducing agencies such as catabolite derepression and manipulation of cyclic AMP levels, heat shock promoters are given a special mention being the main field of investigation of the authors (Piper and Kirk). Transcription initiation sequences, particularly the ADH2 promoter region, are described in detail from their incorporation into vectors to their function in transformation.

The book has a well-filled index.

Although publications are becoming quite numerous describing and extolling the virtues of the eukaryotic yeast cell, both *Saccharomyces* and *Schizosaccharomyces*, as the ideal system for the expression of human genes, this handy-sized book is a welcome addition to the literature providing much of the essential information for genetic manipulation. It would be a useful acquisition for those with commercial interests and for reference in the laboratories of academics working in the field.

D. Wilkie

Essential Molecular Biology: A Practical Approach, Volume II; Edited by T.A. Brown; IRL Press at Oxford University Press; Oxford, 1991; xx + 296 pages. £22.50

This is the second helping of *Essential Molecular Biology* from the excellent *Practical Approach* series. In common with *Essential Molecular Biology Volume I*, it is written for those beginning work in the field of Molecular Biology and the methodology is presented in a form that is easy to follow; however, the book should also be of interest to the more established molecular biologists. The ten chapters of the book are written by different authors (including the editor) and cover different aspects of gene cloning and analysis as well as gene expression. Following a general first chapter on gene cloning and analysis, chapters 2 and 3 deal with the construction of genomic and cDNA libraries in cosmids and bacteriophage λ . Chapters 4 and 5 discuss the radioactive and non-radioactive labelling of nucleic acid probes, the immobilization of nucleic acids to different types of solid support and their use in hybridization experiments. The next chapter

presents methods for DNA sequencing and includes useful sections on analysis of data and problem solving. Chapter 7 is a brief introduction to the polymerase chain reaction (PCR) which is very adequate for the beginner but for the more experienced molecular biologist another book in the same series entitled *PCR: A Practical Approach* (Eds. M.J. McPherson, P. Quirke and G.R. Taylor) would be a better investment. The next chapter presents various methods employed for the analysis of DNA-Protein interactions. Chapter 9 deals with the sequencing of RNA whilst chapter 10 describes methodology for the mapping of transcribed sequences. Appendices 1 and 2 give details of the widely used strains of *Escherichia coli* and a collection of media recipes and general procedures. Appendix 3 contains a series of computer-generated figures showing the patterns seen in 1.4% agarose gels for 148 different restriction enzyme digests of each of six different